

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-10 (Canceled).

Claim 11 (New): A data retrieval method comprising:

storing a plurality of information data items in a first memory, each of the information data items including one or more elements, each of the elements having an element name and an element value;

estimating a category of the element value of the each of the elements to obtain a label corresponding to the category;

storing a plurality of data items in a second memory, each of the data items including the element name of a respective of the elements and the label corresponding to the category of an element value of the respective element;

inputting a search request including a keyword and a label;

retrieving one of the data items which includes the label included in the search request to obtain the element name included in the one of the data items;

retrieving one of the information data items which includes a first element whose element name is equal to the element name included in the one of the data items and a second element whose element value includes the keyword; and

outputting the element value of the first element.

Claim 12 (New): A data retrieval method comprising:

storing a plurality of information data items in a first memory, each of the information data items including one or more elements, each of the elements having an element name and an element value;

estimating a category of the element value of the each of the elements to obtain a label corresponding to the category;

storing a plurality of data items in a second memory, each of the data items including the element name of a respective of the elements and the label corresponding to the category of the element value of the respective element;

storing a plurality of words and a plurality of labels corresponding to the words, respectively, in a third memory;

inputting a search request expressed in natural-language and including a plurality of words;

retrieving, from the third memory, one of the labels which corresponds to one of the words included in the search request;

extracting another of the words included in the search request as a keyword;

retrieving one of the data items which includes the one of the labels to obtain the element name included in the one of the data items;

retrieving one of the information data items which includes a first element whose element name is equal to the element name included in the one of the data items and a second element whose element value includes the keyword; and

outputting the element value of the first element.

Claims 13 (New): A method according to claim 11, wherein estimating includes:
storing a plurality of patterns of the element value and a plurality of labels which correspond to the patterns respectively and correspond to a plurality of categories respectively; and
comparing the element value with the patterns, to obtain the label which corresponds to one of the categories to which the element value belongs.

Claim 14 (New): A method according to claim 12, wherein estimating includes:
storing a plurality of patterns of the element value and a plurality of labels which correspond to the patterns respectively and correspond to a plurality of categories respectively; and
comparing the element value with the patterns to obtain the label which corresponds to one of the categories to which the element value belongs.

Claim 15 (New): A data retrieval apparatus comprising:
a first memory to store a plurality of information data items, each of the information data items including one or more elements, each of the elements having an element name and an element value;
an estimation unit configured to estimate a category of the element value of the each of the elements to obtain a label corresponding to the category;
a second memory to store a plurality of data items, each of the data items including the element name of the each of the elements and the label corresponding to the category of the element value of the each of the elements;
an input unit configured to input a search request including a keyword and a label;

a first retrieval unit configured to retrieve one of the data items which includes the label included in the search request and to obtain the element name included in the one of the data items;

a second retrieval unit configured to retrieve one of the information data items which includes a first element whose element name is equal to the element name included in the one of the data items and a second element whose element value includes the keyword; and

an output unit configured to output the element value of the first element.

Claim 16 (New): A data retrieval apparatus comprising:

a first memory configured to store a plurality of information data items, each of the information data items including one or more elements, each of the elements having an element name and an element value;

an estimation unit configured to estimate a category of the element value of the each of the elements to obtain a label corresponding to the category;

a second memory to store a plurality of data items, each of the data items including the element name of the each of the elements and the label corresponding to the category of the element value of the each of the elements;

a third memory to store a plurality of words and a plurality of labels corresponding to the words respectively;

an input unit configured to input a search request expressed in natural-language and including a plurality of words;

a first retrieval unit configured to retrieve, from the third memory, one of the labels which corresponds to one of the words included in the search request;

an extracting unit configured to extract another of the words included in the search request as a keyword;

a second retrieval unit configured to retrieve one of the data items which includes the one of the labels, to obtain the element name included in the one of the data items;

a third retrieval unit configured to retrieve one of the information data items which includes a first element whose element name is equal to the element name included in the one of the data items and a second element whose element value includes the keyword; and

an output unit configured to output the element value of the first element.

Claim 17 (New): An apparatus according to claim 15, wherein the estimation unit includes:

a fourth memory to store a plurality of patterns of the element value and a plurality of labels which correspond to the patterns respectively and correspond to a plurality of categories respectively; and

a comparing unit configured to compare the element value with the patterns to obtain the label which corresponds to one of the categories to which the element value belongs.

Claim 18 (New): An apparatus according to claim 16, wherein the estimation unit includes:

a fourth memory to store a plurality of patterns and a plurality of labels which correspond to the patterns respectively and correspond to a plurality of categories respectively; and

a comparing unit configured to compare the element value with the patterns to obtain the label which corresponds to one of the categories to which the element value belongs.

Claim 19 (New): A data retrieval program stored on a computer readable medium, the computer program comprising:

first program instruction means for instructing a computer processor to store a plurality of information data items in a first memory, each of the information data items including one or more elements, each of the elements having an element name and an element value;

second program instruction means for instructing a computer processor to estimate a category of the element value of the each of the elements to obtain a label corresponding to the category;

third program instruction means for instructing a computer processor to store a plurality of data items in a second memory, each of the data items including the element name of the each of the elements and the label corresponding to the category of the element value of the each of the elements;

fourth program instruction means for instructing a computer processor to input a search request including a keyword and a label;

fifth program instruction means for instructing a computer processor to retrieve one of the data items which includes the label included in the search request to obtain the element name included in the one of the data items;

sixth program instruction means for instructing a computer processor to retrieve one of the information data items which includes a first element whose element name is equal to the element name included in the one of the data items and a second element whose element value includes the keyword; and

seventh program instruction means for instructing a computer processor to output the element value of the first element.

Claim 20 (New): A data retrieval program stored on a computer readable medium, the computer program comprising:

first program instruction means for instructing a computer processor to store a plurality of information data items in a first memory, each of the information data items including one or more elements, each of the elements having an element name and an element value;

second program instruction means for instructing a computer processor to estimate a category of the element value of the each of the elements to obtain a label corresponding to the category;

third program instruction means for instructing a computer processor to store a plurality of data items in a second memory, each of the data items including the element name of the each of the elements and the label corresponding to the category of the element value of the each of the elements;

fourth program instruction means for instructing a computer processor to store a plurality of words and a plurality of labels corresponding to the words respectively in a third memory;

fifth program instruction means for instructing a computer processor to input a search request expressed in natural-language and including a plurality of words;

sixth program instruction means for instructing a computer processor to retrieve, from the third memory, one of the labels which corresponds to the one of the words included in the search request;

seventh program instruction means for instructing a computer processor to extract another of the words included in the search request as a keyword;

eighth program instruction means for instructing a computer processor to retrieve one of the data items which includes the one of the labels to obtain the element name included in the one of the data items;

ninth program instruction means for instructing a computer processor to retrieve one of the information data items which includes a first element whose element name is equal to the element name included in the one of the data items and a second element whose element value includes the keyword; and

tenth program instruction means for instructing a computer processor to outputting the element value of the first element.